INEEL PUBLIC MEETING

ON PROPOSED CLEANUP PLAN FOR

WASTE AREA GROUP 5

(POWER BURST FACILITY/AUXILIARY REACTOR AREA)

Tuesday, May 18, 1999
7:10 p.m.

Double Tree Hotel Downtown
Boise, Idaho

ORIGINAL

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FACILITATOR:

Simpson, Erik

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Allred, Matt
Fromm, Jeff
Hiaring, Chris
Holdren, Jean
O'Neill, Kevin
Webber, Frank

PRESENTERS:

O'Neill, Kevin
Reno, Scott
Rose, Keith

AUDIENCE MEMBERS:

Allister, Pamela
Barr, Stephen
Hardy, Rick
Henscheid, Eric

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BOISE, IDAHO, TUESDAY, MAY 18, 1999

MR. SIMPSON: Okay. Let's go ahead and get started. I just want to introduce myself. I'm Erik Simpson. I am the community relations plan coordinator for the Environmental Restoration Program. And I will be the facilitator for tonight's meeting, not that we will need one since we have a small crowd here.

We're here tonight to discuss the Waste Area Group 5 Remedial Investigation Feasibility Study and subsequent proposed plan. The Waste Area Group 5 is the Environmental Restoration Program designation for the Power Burst Facility and Auxiliary Reactor Area. And this is the sixth comprehensive environmental investigation completed at the Idaho National Engineering and Environmental Laboratory, and we have three more to go.

The Waste Area Group 5 proposed plan follows the Waste Area Group 1 proposed plan, which was released last fall. The WAG 1 proposed plan was developed largely with the help of a citizens' focus group, and some people who were on that focus group are here tonight.

And what we did with the WAG 5

proposed plan is, we followed what had already been established and accepted by our focus group. And we had the Citizens' Advisory Board Environmental Restoration Subcommittee, review this document and comment on it, and we incorporated their comments into this document. So, really, to get to this final product has really involved a lot of people's time and efforts.

At this time I would like to just quickly run through the agenda. We'll have the Waste Area Group 5 presentation, and then we'll have a questions and answers session following the presentation. Since we have such a small crowd, if you have questions during the presentation, go ahead and ask them. And, also, following the presentation we will come back to questions and answers.

Following the questions and answers session, we will have a short break, and then we will wrap up with a formal comment session where your comments will be entered into the record. And we have a court reporter here tonight, who will be recording all portions of this public meeting.

You can also submit your comments in writing. There is a form at the back of the

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proposed plan. It's postage paid, so you can jot down any comments that you have and fold it and put it in the mail. Also we have a comment form at the back of the room, and you can do the same with the comment form, just write on it and place it in the mail.

Also, for the first time, you can submit comments to us via the Internet through our website. I should also mention, on the back of the agenda, we have a survey. Just let us know if this meeting has been effective for you, and then we'll use your comments and suggestions to shape some of our future public meetings.

At this time, I'd like to introduce the presenters for the meeting tonight. With the State of Idaho, Division of Environmental Quality, we have Scott Reno. Scott will give an overview of the project and talk about the contaminant sources. With the Environmental Protection Agency, Region 10, in Seattle, we have Keith Rose. And Keith will talk about the risk assessment process and the remedial action objectives. With the Department of Energy, we have Kevin O'Neill. Kevin will talk about the proposed alternatives and will provide a brief summary at the end of the

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presentation. With that, I will turn the microphone over to Scott.

MR. RENO: Well, I would like to thank you folks for coming to hear about the proposal that we have for cleaning up Waste Area Group, that we haven't made any decisions yet. We're here to get your input before we make one. And, again, I appreciate you just coming to hear us out and tell us what you think. If you have this with you, this handout, you can kind of follow along a little bit.

I am, for the first part of this presentation, going to deviate a little bit from what is written here and go through some figures rather than the written description there. If you like, you can follow along.

Waste Area Group 5 is the Power Burst Facility/Auxiliary Reactor Area. And it's here to the south central portion of the INEEL. The PBF and ARA area consists of nine current former test reactors, in the north area, this is the area that is known as the Power Burst Facility. It currently consists of the Power Burst Reactor, which is in standby mode. And the Waste Engineering Development Facility, the Waste Experimental Reduction Facility,

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which is the WERF incinerator, that is present there and the Mixed-Waste Storage Facility.

Formerly, the SPERT-I Reactor was located at what is now the PBF Reactor. SPERT-II was here. SPERT-III is here. And SPERT-IV was in this area. And they went around like the spokes in a wagon wheel around the central control area. It's about a distance of a mile to the road to the control area.

The second area is the Auxiliary Reactor Area. It's four areas. The first of which, the ARA-I Facility was designed to support operation for the SL-I Reactor, which was located here, at what is now ARA-II. As most of you are probably aware, there was an accident that destroyed that reactor in 1961. And I will talk a little bit more about that here in just a moment.

At the Auxiliary Reactor Area-III was the Army's gas-cooled reactor experiment. I will show you here this is where their disposal pond is located. The Area-IV area housed the Nuclear Effects Reactor and the Mobile Low-Power Reactor. The Mobile Low-Power Reactor was a reactor that was on tanks and designed for potential battlefield use as a power source.

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All of the structures in this area have now been dismantled and decontaminated. And ARA-IV is currently used for explosives testing.

AUDIENCE MEMBER: What does S-P-E-R-T stand for?

MR. RENO: That is the Special Power Exertion Reactor Test. Basically what they were doing is, they were testing the effects of the reactors. If they were approximating a uncontrolled reaction, it would raise the control rods momentarily and allow the reaction to proceed very rapidly and examine the effects on the fuel to support safety analyses for the Naval Reactors' Program.

AUDIENCE MEMBER: Do you want us to ask questions now or would you like to....

MR. RENO: I think that is okay.

AUDIENCE MEMBER: I have a question already. I have a question about ARA-IV. You said, "Currently used for explosives testing." Do you know what they are testing out there?

MR. RENO: Conventional explosives. I don't know the specification of the research they are doing.

MR. WEBBER: I can speak a little bit.

Currently, all of the experiments are conducted inside the old bunkers, there is a large concrete bunker there, a couple of the things they are doing are trying to look at different ways of plating different metals together using explosives. Some of it's under contract with the Department of Transportation, different agencies from different experiments looking at alternate ways of welding. It's, actually, a very small facility and very, very controlled explosives. I have the name of the project manager if you are interested.

AUDIENCE MEMBER: It's DOT and DOE, then?

MR. WEBBER: Actually, I think it's DOT. But the gentleman who can tell you is Gary Korth, K-o-r-t-h.

MR. RENO: Thank you, Frank.

Now, there has been a number of activities that have taken place out here already. We did a clean-up action or an interim action -- actually, it was the final ROD of PBF Evaporation Pond where there was hot spots for removal of cesium-137 and chromium contamination of the pond sediments. It was a lined pond. And prior to discharging the pond, there was a sump where solids

would settle into the evaporation or for discharge of the evaporation pond. We also removed the contents of the sump.

In addition, for the burial ground, the trenches, the two trenches and the pit from the SL-1 incident, where they disposed of the majority of the debris from the reactor, we placed an engineered cover over that area.

As I said before, much of the -- or all of the Auxiliary Reactor Area has been dismantled. And we did a removal of some contaminated liquids and sludge in the three septic tanks of APA- 02 site. And I will describe that a little more further in just a moment.

In our Remedial Investigation/Feasibility Study, we investigated a total of 55 sites, 48 of which were determined to not present any unacceptable risk. And we had seven remaining sites after these actions in our RI/FS which still need attention.

The first of the these is the ARA-I Radionuclide Tank, or ARA-16, which is a 1000 gallon stainless-steel tank. It's located back behind the ARA-I facilities. They received some fluids from metal-etching processes in the hot

shops at the ARA-I building. There is on the order of 29 gallons of sludge in the bottom of this tank. It's contaminated with mixed, low-level waste, and PCB.

Also, within the concrete vaults the tank sits in, we did find some cesium-137 contamination within the backfill in that vault. We don't believe it's a result of any release from the ARA-16 tank since the types of contaminants found, or the contaminants found, were consistent more with this general depositional contamination from the SL-1 incident rather than this hodgepodge of what is called the radionuclides and the PCB that is present in the Area-16 tank. Therefore, we don't believe the tanks have leaked. And we will treat the soil in the vault as we treat the other contaminated soils from the other soil sites.

The second tank site is also associated with this ARA-I Facility. It's a series of three septic tanks in a series which discharge to a seepage pit, which is about 12 feet deep. As I said before, we did a removal action at the seepage pit and removed these contaminates. Sludge was present there. But we do have about two yards of sludge at the bottom of the seepage pit that we're

proposing to deal with in this Record of Decision of this plan and the contaminated piping and debris. The contents of that sludge also are mixed, low-level waste with some PCB.

AUDIENCE MEMBER: Is that associated with human waste? Usually you associate septic tanks with human waste.

MR. RENO: That is a good question, and I should have pointed that out. I intended to point that out. We're unsure of the source of this contamination in the sanitary septic system. We know it's there, and we are addressing the contamination. It should not have been there. Something, evidently, had been dumped there inadvertently somewhere along the way, but it should have been sewage rather than mixed waste with PCBs. Good question.

For our five contaminated soil sites, the most significant is what we call ARA-23. This is depositional contamination from the clean up after the SL-1 incident. And on January 3rd, 1961, the SL-1 reactor had a power exertion, and the steam explosion, which, unfortunately, resulted in the death of three operators that were present at the facility that day. And subsequent to the clean

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up of that, we have this 58 acre site. The contamination, we believe, is limited to the upper four inches of soil and primarily cesium-137 that presents an unacceptable risk.

Any questions?

I should have mentioned, on that SL-1 site, we're estimating on the order of 46,500 cubic yards of soils are candidates for remedial action from that site.

The ARA-25 site was discovered fairly recently during the decontamination and dismantle activities for the ARA-1 facility. It was discovered under some concrete floor slabs near the area of some floor drains, which drains the ARA-16 tank. We believe that on the order of 70 cubic yards of contaminated soils, low-level contaminated soils, primarily radionuclides, were present at that site.

The ARA-12 leach pond received secondary coolant water from the Army's gas-cooled reactor experiments. We believe there is on the order of 90 cubic yards of contaminated material at this site. There may be a little more. There may be another area that has some additional cesium contamination that we will address. But this is

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primary contaminated with silver-108m and also some cesium-137.

The ARA-1 Chemical Evaluation Pond receives the laboratory waste from the hot shops at the ARA Facility, chemical wastes. We expect there is on the order of 2400 cubic yards of contaminated soil here, primarily thallium and selenium. This was a shallow, unlined pond when that discharge was, as was the ARA-12 pond.

This is our PBF-16 site, I believe. The last contaminated soil site is site PBF-16. They received some water softener backwash from the SPERT-II Reactor. It's also a shallow, unlined pond. And there was some reported mercury detected here, the outfall to the pond. And we're expecting in the neighborhood of 500 cubic yards of contaminated soil at that site.

Are there any questions?

AUDIENCE MEMBER: About how long do you think it took? I would be curious to know how long it took to achieve that current status of that contaminated site, that last contaminated site.

MR. RENO: The PBF-16? Most of these reactors were operational in the '50s through the earlier '80s.

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AUDIENCE MEMBER: Are you talking about a continuous 30 years, then?

MR. RENO: No, it wasn't operating continuously. It was operated periodically over that time. So, I don't think we could tell you precisely when the contaminations was first released.

AUDIENCE MEMBER: I was wondering about the lifetime.

MR. RENO: It's been there at least since the early '80s.

AUDIENCE MEMBER: I wanted to ask a question about that pond too. You said it had -- I'm looking at page 5, and it has mercury in it in addition to these. Mercury was one of the substances in these or how did mercury get in there?

MR. RENO: In the PBF-16 pond?

AUDIENCE MEMBER: Or did it misread?

MR. RENO: Mercury, I believe, is our contaminate of concern from an ecological risk perspective. We're not entirely sure of precisely how the mercury got to the pond. There were analytical results. It was during some testing to look at the wide spectrum of heavy metals and

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things that may have gone to the pond that was detected.

MR. WEBBER: It should be pointed out on page 13 of the proposed plan that the preliminary remediation goal is about .5 milligrams per kilogram, and the maximum concentration detected there is .71 milligrams per kilogram. So, it's really marginally contaminated. It's right on the level of being in an acceptable risk range.

AUDIENCE MEMBER: These other things that are listed here are not agents of concern at the time, the sulfuric acid and sodium hydroxide?

MR. RENO: No, they are not.

AUDIENCE MEMBER: They were carriers of some kind.

MR. RENO: Right. I apologize. I was summarizing some of the detail in there.

AUDIENCE MEMBER: This is sort of a pea soup that would eventually neutralize itself and not a problem for most of these substances.

MR. RENO: That is true. The acids and bases are discharged there. They tend to neutralize each other.

With that, I will turn this over to Keith Rose with the U.S. EPA, who is going to

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discuss the Risk Assessment Process for Waste Area Group 4.

MR. ROSE: Good evening. My talk tonight will primarily be about the risk assessment, but I will also identify the remedial action objectives and the evaluation criteria that we used to evaluate the alternatives that were developed for WAG 5.

The risk assessment process consisted of three major elements. First, was to identify the contaminants which would cause adverse effects to human health of the environment. These contaminants are typically referred to as contaminants of concern. The second step is to identify pathways by which humans and ecological receptors could be exposed to the these contaminants of concern. These pathways include direct exposure, soil, groundwater ingestion and determine contacts. The third element is to identify the receptors which could be exposed to contaminants of concern at levels which could cause adverse effects.

For the human health risk assessment, we considered two different types of exposure scenarios. The first one was an occupational

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or worker scenario. This area consisted of eight-hour, 250-days-a-year for 25 years exposures, consisted of a current worker beginning at the current time and also a worker being exposed 100 years in the future. Let me just mention, the 100 future scenario was based on the fact that we expect the INEEL facility to be under government control for at least 100 years. That is why we are using 100 years as a baseline scenario for future scenario.

The primary pathways of concern under this scenario would be external exposure and very little absorption. Currently we have institutional controls in place, such as such things as barriers and fences, worker monitoring, et cetera, which we believe are protective of current workers.

The other area, scenario of concern of human health was a hypothetical future residential scenario where someone builds a house in or near the area of contamination. The exposure under this scenario would be 24 hours, 350-days-a-year for 30 years. It would begin 100 years in the future. And the primary pathways of concern here are external exposures and dermal absorption.

There are two different types of

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contaminants that can cause human health effects. One type are carcinogens or cancer causing substances. The acceptable risk range for carcinogens are between 1 in 10,000, 1 in 1 million excess cancer incidences that is shown here in this graph here. This is the acceptable risk range between 1 in 10,000 and one in a million.

Typically, we will take a clean-up action level that falls within this range. There are other substances which do not have carcinogenic effects but have toxic effects. And for those, we use an indicator called the hazard index. That is a ratio of the exposed dose to a reference dose. If the ratio is about 1.0, we will consider clean-up actions for that site. Levels below 1.0 are considered to be unlikely to cause adverse health effects.

The other main part of our risk assessment was for ecological risks. This ecological risk assessment looked at possible impacts to plants, animals, birds, reptiles, and insects. They evaluated individual species' concerns as well as groups of species. The contaminant screening that was conducted was based on the site-specific data as well as data collected

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from the literature. The assumption used -- one of the assumptions used in the risk assessment was that the receptors would be exposed to the contaminated areas for 100 percent of their lifetime. That is very conservative because we know that animals move around and migrate and are rarely at one place for their entire lifetime. So, this was a conservative assumption using that risk assessment.

This risk assessment assumed that receptors would receive doses from contaminated soil as well as ingestion of contaminated prey and plants. We will start at the highest ecological risk for two groups of animals, insect-eating mammals such as the Merriam's shrew and the northern grasshopper mouse and for the insect-eating birds such as ruby-crowned kinglet and the western bluebird.

In determining an adverse risk to the ecological receptors, we use an indicator called the hazard quotient, the ratio of potential dose to a toxicity reference value.

This table shows contaminants of concern at each of the seven sites, which Scott earlier identified. You can see, for human health, we had

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several radionuclides, including arsenic as the consistent contaminant of concern. And among the radionuclides, cesium-137 was a contaminant of concern at five sites.

For ecological receptors we had five different metals of concern. We had selenium, thallium, mercury, copper and lead.

This table is the result of the risk assessment. It's also identical to the table in the proposed plan. It shows the seven sites of concern over here on the left side. And it shows the occupational risks, both for a current worker and a future worker in these columns. It shows the future residential risks in this column here.

Now, we use the future residential scenario as the baseline scenario for determining whether an action was necessary at the site because it is typically the more conservative of the three scenarios. Also, let me add that we believe that there are adequate controls in place currently to protect the current worker from unacceptable exposures. You see here that of the seven sites, there were risks exceeding the acceptable risk range at five of the seven sites, risks at 1 in 10,000 or greater.

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And the column to the far right, we have the risks for ecological receptors. And this table shows those sites where we had a hazard quotient greater than 10. And there were four different sites. We had a hazard quotient greater than 10.

These are the remedial action objectives. They serve as the basis for determining clean-up action levels at the site. There are four of them. First, to inhibit direct exposure to contaminants of a result in excess of the cancer risk of 1 in 10,000 for workers and future residents. The second is to inhibit dermal absorption of any contaminant of concern which would result in a hazard index of two or greater for workers on future residence. Third is to prevent release of, and human or ecological exposures to, the ARA-16 tank. And, finally, to inhibit ecological receptors exposure to contaminated soil that has contaminated concentrations greater than 10 times background and a hazard quotient greater than 10.

Finally, these are the evaluation criteria that are used for the alternatives which were evaluated for WAG 5. These are CERCLA, or Superfund, criteria that are used to evaluate all

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the alternatives that are evaluated under Superfund. They are broken into three categories: threshold, balancing, modify. The threshold criteria must be met for an alternative to be considered. In that category we have protection of human health and we comply with applicable environmental laws and regulations.

The second set of criteria are called balancing criteria. They are used to rank alternatives relative to each other. And they include long-term effectiveness of the remedy, the ability to reduce toxicity, mobility, or volume through treatment.

The third is the short-term effectiveness of the remedy, how will the remedies impact workers, the environment, and the community during the implementation of the remedy.

The fourth is the ease of implementation of the remedy. Finally, we consider cost. The cost, we look at not only the cost of constructing the remedy, the capital cost, but the long-term operational and maintenance cost of that remedy.

Finally, the modifying criteria are state and public acceptance. That is the purpose of this public comment period, to gather your input

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into the process so we can determine whether we need to modify the remedies we identify. At this point, I'm going to turn it over to Kevin O'Neill of the Department of Energy. He's going to talk about the alternatives that we're considering for WAG 5.

MR. O'NEILL: Thank you, Keith. The two guys before me are real smart, so I need a cheat sheet. First of all, I want to talk about the proposed alternative. The alternative that we evaluated and our preferred alternative for the contaminated soil site, they were all grouped together as one remedy for all of the sites.

Listed here are all of the alternatives that we looked at initially. Some of them were screened out and others were evaluated more comprehensively, and you will see those discussed in detail in the proposed plan. The no action alternative means we do essentially nothing except environmental monitoring. That alternative doesn't pass the threshold criteria. However, we use it as a baseline to compare the other alternatives on the cost of that.

The limited action alternative, basically, looks at continuing the things that

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we're doing today: environmental monitoring, administrative control, and procedures to protect people from coming in contact with the contamination or keeping the contamination from coming in contact with the people. That also, in the case of the different actions that we talked about tonight, did not pass threshold criteria. And, generally, won't be discussed in detail.

For the soil sites, the next alternative that we looked at was excavation and consolidation and containment for the native soil cover within the Waste Area Group 5. Somewhere in there we would build a soil repository. This particular alternative was deemed not protective, did not pass threshold criteria because the constituents, the contaminants of concern are long lived and would be there beyond our assumed 100 year institutional control period. And there would be no assurance of that cap, that native soil cap, would not erode and, hence, not be effective.

The next one would be a similar alternative; however, we would build an engineered barrier much like the SL-1 where we use various grades of rock and cobble and riprap to preclude the entrance into the contained area by animals or

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persons.

The next four could all be characterized as removal and disposal. Removal of the contaminated soil, soil that is contaminated at the level that is unacceptable and disposed, disposing of it in a compliant facility. That disposal might take place on site or off site. The last two of those, the additional activity of performing ex situ soil sorting. We would run that soil through what is called a segmented system which would separate the soil into a clean pile and a dirty pile based on the level of contamination. And this situation, we're talking about cesium-137 contamination.

The interest in doing soil sorting is to reduce volume, to reduce the amount of material that we would have to send for disposal and pay for disposal. While I'm on that, I would like to discuss briefly the segmented gate system. We are currently getting ready to demonstrate this technology at WAG 5 in the next month. We are going to process 1,000 cubic yards of material. Our hope is that we will be upwards of 90 percent volume reduction. Based on that treatability study, we will determine whether or not this technology would be worth the cost of implementing.

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With that, this is our decision tree for how we would proceed with our preferred alternative based on the effectiveness of soil sorting and the availability of on-site or off-site disposal. If soil sorting proves to be cost effective, our first choice would be to dispose of it on site if we have available a compliant on-site soil repository. If soil sorting is not effective, then we would just excavate and dispose of it directly.

Next, if this new repository is not available at the time that we take this action and we have other locations on site that can accept soil, based on volume and the level of contamination, waste acceptance criteria and those things, we would look at disposing, sorting and disposing, if it's cost effective, on site. If there is no suitable on-site location, we would look at disposing off site. And in this situation, we don't need 90 percent effectiveness, even a 50 percent effectiveness reduces the cost of off-site disposal because of the added costs of transportation and the higher disposal rates.

AUDIENCE MEMBER: What are you talking about, then, if you have a clump of soil that is considered to be -- doesn't pass inspection, are

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you going to dilute it out with clean soil and go ahead and deposit at the site?

MR. ROSE: No. First off, as I mentioned, we're going to test the technology and see if we can even get the kind of separation that we need. But, no, we would run the soil through once and develop a dirty pile. In other words, a pile of that soil that is higher than our set point and a pile that is lower.

AUDIENCE MEMBER: And the set point cannot be diluted down with clean soil in any way?

MR. ROSE: No, it would not be appropriate for us to blend the soil, the dirty soil with clean soil before passing it though there. Our objective is to remove as much of the high levels of contamination as we can.

But that is a good question because such a thing could happen if it was not properly managed. So here are the alternatives for soil sites ranked. As I mentioned, none of them were evaluated in detail -- I should say these three were, but no action as a baseline. Basically, continuing our monitoring. This is building an engineered facility, leaving the waste at WAG 5 in a confined area.

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The preferred alternative, again, is to remove the soils, to process it through a soil sorter and dispose of the dirty soil at that on-site compliant facility. Now, you look here, we have a range of percentages and what we're trying to display here is the change in the cost based on a percentage of volume reduction. Zero percent means that we did not process the waste through the soil sorter, but just direct disposed. As you see that holds currently at the lowest cost. When we originally did our feasibility study, we used an assumption of 50. We felt that was conservative. We also used the cost which is somewhat conservative. And then we further evaluated, in less detail, what would be the cost if we got 90 percent reduction. And you can see here, as the volume reduction goes up, the cost goes down. And here with off-site disposal, even 50 percent, as I said, gives us a benefit.

Again, this is all contingent on the application of this technology at our site. We're using information from other sites. We need to look at how it performs in our soil with our contamination.

AUDIENCE MEMBER: When you say other

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sites, are you referring to INEEL or other facilities around the United States?

MR. ROSE: Yes, other facilities, primarily DOE facilities. This has been implemented at several DOE facilities including Nevada and Sandia and places out East.

The next action is regarding the sanitary waste system. As described before, this includes three septic tanks, some piping, and a seepage pit. The preferred alternative is to remove the material, the tanks, the piping, and the material that comprises the seepage pit, to treat the waste in the seepage pit at our WERF, Waste Experimental Reduction Facility, to dispose of the concrete block from the seepage pit as a suitable mixed-waste facility off site to decon the piping and the tankage and dispose of that on site.

The next alternative was to basically do the same thing only, using chemical stabilization as opposed to thermal treatment. It would require some developmental work. The thermal treatment is readily available and this is presumed to be more costly.

In situ stabilization, basically, means filling the seepage pit with soil and grout,

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filling the piping and the septic tank with grout and leaving those components in place. This is how they rank out. You can see our preferred alternative is by far the lowest cost. It removes all the contaminated materials from the site and is either treated such as the sludge at WERF or is disposed of in a compliant facilities.

The last action is regarding the radionuclide tank site. Again, it is a tank that contains waste that we believe has not leaked. However, there is other contamination around it. The soil around that tank is contaminated like the soil and that generally would be treated along with the soil sites.

We looked at a number of alternatives that involved in situ vitrification. If you're not familiar with that, basically, it comprises of putting electrodes in the ground, charging them with electricity, melting the tanks, the waste, all the soil and the media around it.

That technology has been demonstrated. We believe that it would be effective, that it would either destroy or immobilize all the contaminants. However, it has not been demonstrated on a PCB -- a tank with PCBs in it, so

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that would take some work. Also, because that has not been demonstrated, we would have to do some post-treatment monitoring to be sure that we were protected.

AUDIENCE MEMBER: Could you clarify, what is in situ?

MR. ROSE: In situ basically means in its situation. It's in the ground. The tank is in the ground. The second two are kind of a misnomer of that because we talk about taking it out and treating it in situ as at Test Area North. They were planning to do in situ vitrification of tanks at TAN. We thought, well, one alternative would be to take our waste up there, was then treated at the same time, or take our tank and its waste up there and let them do it. We believe technically it could be done. However, implementability is difficult because we would have to demonstrate that the process was effective. And that could become costly, and it could be difficult regulatorily.

Our preferred alternative is ex situ thermal treatment, meaning we are going to remove the waste from the tank, take it to another facility and treat it. The facility that we are talking about here is the Advanced Mixed Waste

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Treatment Facility, or, if it's not available at the time, another appropriate facility, if we can find one, and disposing of the treated waste on site.

We also looked at the same process and disposing off site. We also looked at ex situ stabilization, which, again, would be a chemical process which would take some development, likely to be more costly and currently not immediately available for this particular waste. We would have to do some testing. Again, on-site or off-site disposal.

And this is how they rank up. You can see there, if you look at these bubbles, there is not a lot of difference between some of these. However, our preferred alternative does rank higher with the notion on implementability. I believe it would be effective in the long term. It would remove the waste, the tank contents, all that would be removed from the environment, treated, and any residual waste would be disposed of at a compliant facility.

So, in summary, having looked at WAG 5, 55 potential release sites. Seven of those sites, we have determined, pose an unacceptable risk to

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humans or ecological receptors. We have proposed alternatives for treating those sites. If you sum up the cost of all the preferred alternatives that we presented in that proposed planning, could come to a total $26 million. However, that is, as we discussed before, using the 50 percent volume reduction, which would not likely be implemented if that is all we got because direct disposal wouldn't be cheaper itself where we would save at least a million dollars. And if it says, "effective as we like," we may save $5 million off of that price.

So, public involvement, that is what we're here for tonight to let you hear from us, what we think the problems are, the risks are, based on the evaluation that we have done and for us to hear from you on what you think about our alternatives and the things that we have considered.

Our next step in this process, following this proposed comment period, is to develop our Record of Decision. We hope to get that approved and signed by the agencies, DOE, EPA, and the State of Idaho, this fall. We hope to begin a remedial design or a remedial action immediately following that, to begin implementing our actions in the year

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2001 and to complete all this work by 2003. With that, I would turn it back over to Erik.

MR. SIMPSON: Some of you had questions during the presentation. Any more questions? You're nodding your head, Pam. Fire away.

AUDIENCE MEMBER: I'm going to first ask about -- in fact, I think all this is directed toward -- let me do the simplest one. I think I know the answer to this. The Record of Decision that is not funded would be dependant upon whether or not the Advanced Mixed Waste Treatment Facility is open or continues on its course. Is that correct?

MR. O'NEILL: That is correct. That is identified as a likely suitable candidate for treatment.

AUDIENCE MEMBER: The other questions are about the soil contamination clean up. Has the soil sorting technology been used in any other place than the U.S.?

MR. WEBBER: The answer is yes. There has been deployment at numerous sites, DOE sites. At Johnson Hole, they processed 250,000 yards. At Sandia, they processed 1000 cubic yards. At Fernald, several thousand. The reason for running

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the test is, it seems to be extremely effective. If you have discrete particles, that detects, detects and sort. If it is more homogeneously mixed into the mixture, then you get loss of a volume reduction. In our particular case, we're expecting a significant reduction somewhere in the 90 percent volume reduction based on the way our deposition of radioactive particles are.

AUDIENCE MEMBER: The cost estimates, do they include a portion of the cost to construct and operate the proposed on-site soil repository?

MR. O'NEILL: That is a fair question. Yes, in a sense they do. We are not a party to construction, per se, but when we dispose of waste at that facility, there will be a fee. And that fee would go toward the construction and operation and the maintenance of that facility.

AUDIENCE MEMBER: In terms of the soil repository, the waste acceptance criteria -- I don't know where to look. Here it is. What would be the process for the acceptance -- establishment of acceptance criteria and how can the public participate in that?

MR. RENO: Well, if the disposal facility is chosen and selected, the Record of

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Decision, then they will first need at least a 10 percent design of the facility in place in order to determine what kind of risk-based concentrations might be there. So, that would be developed as a component of the remedial design, remedial action phase of the remedy.

Although we may not be able to make any firm commitments tonight, the agencies are discussing ways to incorporate the public in the development of the waste acceptance criteria and the design of the proposed facility. Now, whether that would consist of some workshops or focus groups or meetings or briefings by request or what form that would take hasn't been decided yet, but consideration is being given to that. And I think the agencies are generally in support of having some type of public involvement in that if the remedy is chosen and the WAG 3 ROD.

AUDIENCE MEMBER: Is there a way at this juncture that the members of the Snake River Alliance and the staff could communicate our request for public participation? Should we put that in our comments? Is it going in our comments here or in an additional letter that goes into Cyber Space?

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MR. SIMPSON: Pam, you might put that in your public comment, either in written form or oral form.

AUDIENCE MEMBER: I wanted to review this graphic and ask, then, since this is the first time that this has been done -- first time it's been delivered to the public in such a way at this particular site, and I commend the people who prepared that.

Will this, then, serve as a baseline of the contamination?

MR. O'NEILL: That was our hope. We developed that process. The technology was there, but we developed an engineering design to establish our premise there. Our hope is that when we go back and give you the action, we know now where our isopleth, where we must clean up. We can go back using the same technology and in a very short time determine whether we met our objectives.

AUDIENCE MEMBER: Is there anything historic in your records that would predate this in terms of the contamination, other tests?

MR. O'NEILL: There has been sampling going on there since the accident.

AUDIENCE MEMBER: Since 1961.

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MR. O'NEILL: With different things in mind, primarily human health in determining the boundary more so than the topo map, if you will.

MR. WEBBER: It should be pointed out that the process that we use, the technology that we use is really only good for gamma radiation, and it's working particularly well for the cesium contamination at our risk-base concentrations that we're trying to detect. So, it's not an answer to all radiation problems. And it does take a significant amount of effort to try to correlate gross gama counts to actual concentrations. So it is more of a site-specific -- require some site-specific information before you can just run out and generates a map like this.

AUDIENCE MEMBER: And it appears uncertain. The positioning of certain contaminants work better than others, is that what you're saying?

MR. WEBBER: Yes.

AUDIENCE MEMBER: Now, I need to find the page that has the cost estimates.

I am going to do a joke. I like to always do a joke. I just wanted to know if you have detected any Chinese in here stealing your

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technology on clean up? Bad joke.

So what do we have here for cost comparison? I may not have what was up on the screen.

MR. O'NEILL: Do you want to look at the summary of the cost? If you look at the last page of your proposed plan, do you have that, right inside the back cover?

AUDIENCE MEMBER: My colleagues, who were at the meeting last night tell me that the least expensive was the no-soil sorting.

MR. O'NEILL: Based on our current information, yes.

AUDIENCE MEMBER: So that is accurate?

MR. O'NEILL: Yes.

AUDIENCE MEMBER: Do you think, then, that the volume reduction is worth that expense?

MR. WEBBER: Well, one of the reasons why we're conducting the treatability study is to fine tune operating efficiencies of the equipment, to determine more accurately what type of operational costs might be incurred, and to try to extrapolate the information that we get from 1000 cubic yard sample with 50,000 cubic yard. Without site-specific data, we had to use very

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conservative unit costs for different components of the cost estimate. After the treatability study we hope to fine tune that. As the decision tree that we showed up on the screen depicts, if it turns out that soil sorting is not cost effective, then we might eliminate that and go to direct hauling and disposal. We are looking for the most cost effective alternative.

MR. O'NEILL: There are three elements of that cost estimate for the where the soil sites have continued. One is volume reduction. One is the cost of processing. The other is the cost of disposal. We have an estimate of what it will cost to dispose in the ICDF. But I must say it's an estimate. However, those assumptions were used consistently across this so we could compare them.

AUDIENCE MEMBER: It's kind of a mixed -- it's difficult to assess those if you're not sure of your processing plant, what it will be and where it will be. And your disposal site, where it will be and the transportation and so on.

And worker safety, I'm interested in this. The photograph of the soil sorter is back there. Is there something about that process that makes you absolutely certain that you don't need to

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bubble that area when you're sorting? Or is that just an illustration?

MR. O'NEILL: No. I think the experience gathered to date, the process, really is much enclosed. Where the soil goes in and where it comes out, it's free to the air. But what is going on inside where things are moving is fairly well enclosed because they have to shield against background radiation.

So we have to control dust going in and we have to control dust coming out. And we want to control the people that are exposed to that. So, you might have a buffer area. You may have personal protection equipment. But I think the risks are well in hand. They had a lot of experience running this equipment.

MR. WEBBER: One of the factors are the depth across those detectors on a conveyor belt is only 4 inches. And they do like to keep it within a certain moisture range. So, sometimes you may have to precondition it as you excavate in order to maintain the material as you feed it through the process.

AUDIENCE MEMBER: If there were workers working on that location, where would they be?

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Would they be around the outside of the truck?

MR. O'NEILL: Well, one worker would be operating a shovel, a front-end loader dumping into the hopper. And Frank can point that out there.

MR. WEBBER: Your loader actually dumps into the hopper. This is a control trailer that actually has -- this particular control trailer has the operator in it with all the computer gear, et cetera. Occasionally, they have a person up there to make sure that the material is being fed at consistent rates, up on top of a platform looking down onto the belt on an as-needed basis. This whole system could be operated with three people. Typically a four-person crew is what they have.

AUDIENCE MEMBER: Who is the project manager if I wanted to know more details?

MR. WEBBER: I'm the project manager, so you're talking to the right person.

AUDIENCE MEMBER: I might have time to be curious about what has happened to some of those other locations.

MR. WEBBER: I would be happy to send you some additional reports. The accelerated site technology, or deployment technology initiative, publishes a couple of pamphlets on the deployments

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that they've had at five other sites thus far, and they have had two planned for this year. And some sites they get a significant volume reduction. Other sites, why, it's somewhat marginal.

AUDIENCE MEMBER: It's very interesting. It holds promises. Thank you.

MR. SIMPSON: Do you have more questions, Pam?

AUDIENCE MEMBER: I do. I have one more, I think. WERF. Is there anyone here that can give me an update on the WERF testing? I thought there was a test in January.

MR. RENO: I don't think that any of us are necessarily the experts on WERF. But there were some questions as a result of the trial burn. I think there were some permitting, some compliance issues that need to be resolved prior to us being able to send our material there and to run the facility.

AUDIENCE MEMBER: To check up on that, would I call you, Scott?

MR. SIMPSON: I can give you the name of somebody, Pam. Try Stacy Francis. Her number is 526-0075. I know that that facility had its hundredth burn, I think, last week. I saw it in

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the newspaper. Yes, Stacy would be the person.
MR. RENO: Also, perhaps, Brian Monson if you would like to talk to somebody in our organization. What is the main number there, Jeff; do you recall?
MR. FROMM: 373-0110.
MR. SIMPSON: Any other questions?
AUDIENCE MEMBER: His name is referred to up here and tests were done to determine the failure of threshold nuclear fuel used in water reactors, in boiling water reactors and from anything else.
MR. O'NEILL: Yes, pressurized boiling water reactor and typically a single cycle. The water goes through the reactors and generally through the steam reactor. There is a second loop in there.
AUDIENCE MEMBER: Does that temperature reach below 212 in that reactor?
MR. O'NEILL: Probably above. It's pressurized so you can get pressurized, but there is a second.
AUDIENCE MEMBER: Why not discussion about what is considered to be boiling?
MR. O'NEILL: It's the combination of

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pressure and temperature.
AUDIENCE MEMBER: Going on quickly here. It says, reactor to power a nuclear jet engine and so forth. I guess that was abandoned because of missiles. Is that something that you are not familiar with, a boiling water reactor?
MR. SIMPSON: I think he's referring to the Initial Engine Test Facility there.
MR. O'NEILL: That is at the historical facility; I couldn't guess what they were using that power for. Airplanes? I don't know enough about that, obviously.
AUDIENCE MEMBER: It was a little bit of a side trip there, an immensely huge complex.
MR. SIMPSON: I know a little bit about that project. I know it was canceled in '63. One of the reasons why it was canceled was because, basically, we needed assurances that any aircraft powered by nuclear power wouldn't crash in the United States. And that just wasn't, basically the government couldn't assure that 100 percent of the time that a plane would not crash in the Continental United States. And that was one of the conditions for the project's cancelation.
AUDIENCE MEMBER: Thank you.

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MR. SIMPSON: Any other questions?
Let's take a break. Let's come back at 8:30 and then we will have public comment session in about five minutes.
(Recess.)
MR. SIMPSON: This is the portion of our meeting where you can provide comments to EPA, DOE, and the state of Idaho on the Waste Area Group 5 proposed plan. Your comments will be responded to in the responsive summary section of the Record of Decision that is due out in the fall of this year. And, please, when you make a comment, spell your name and give your mailing address so we can send you a copy of the decision.
Pam, I know you wanted to make a comment.
AUDIENCE MEMBER: Pam Allister. And I have one short question, which is our input at this time. Well, I have several things to say. I would like to commend the publishers of the document. I think they are improving in their readability and support to the public to get the information. So, thank you to all of the people that have been doing that.
The Snake River Alliance will be

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submitting its written comments from our Pocatello office within the deadline. So, what I have to say is that it's basically a request at this time and not part of public comments but will be included. That is, that we request full participation in the developing of the waste acceptance criteria for the soil repository, any soil repository in Idaho. And thank you very much, everybody.
MR. SIMPSON: Thanks for your comment.
Anyone else? Steve, did you want to?
AUDIENCE MEMBER: Thank you, folks, for coming around and giving us this, some detail in here that we really need to be aware of. Thank you.
Stephen Barr. I live at the edge of Boise, actually my mailing address is Kuna.
MR. SIMPSON: Thanks. Anyone else?
No. At this time I would like to remind everyone that the comment period on this project remains open until June 9th. And you can submit comments through the use of a comment form that we have at the back of the room for the proposed plan.
And the next time we will be conducting public meetings will be in July or August on the

Central Facility Area. There is an interim action that is proposed for some of our contaminated soils. With that, thank you for coming tonight.

(Meeting concluded at 8:35 p.m.)

STATE OF IDAHO)
) ss.
County of Ada)

I, NANCY SCHWARTZ, a Notary Public in and for the State of Idaho, do hereby certify:

That said hearing was taken down by me in shorthand at the time and place therein named and thereafter reduced to computer type, and that the foregoing transcript contains a true and correct record of the said hearing, all done to the best of my skill and ability.

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 10th day of June, 1999.

Nancy Schwartz, Notary Public in and for the State of Idaho

My commission expires:
September 28, 1998

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